

WELL SUMMARY

page 1 of 3Location ID: BLM-6-488 Field Representative(s): P. EganDate Started: 04/03/90 Date Completed: 04/18/90Northing: 224682.43 Easting: 405938.50Drilling Method: Mud/Air foam Rotary Drilling Contractor: Larion Drilling
Driller: J. GowerTotal Depth Borehole: 506' Total Depth Well Casing: 503.5'Total Depth Surface Casing: 70'Diameter Well Casing: 4" Diameter Surface Casing: 10"Length of Bottom Blank: 5.3'Type of Screen: extra strength 0.02 slotScreen Interval: 487.7' to 498.2'Water First Detected: ≈ 490' Water Level Open Borehole: 367'Water Level Cased Borehole: 370.3'Quik-Foam Use: 5 gallons

Estimated Water Use: 5,100 gallons used to drill borehole

Well Casing:

4in x 3ft SCD 40 PVC:	0	stock SS centralizers:	0
4in x 5ft SCD 40 PVC:	0	custom SS centralizers:	1
4in x 10ft SCD 40 PVC:	0	4"x2' SS locking riser:	1
4in x 20ft SCD 40 PVC:	0	4" SS locking cap:	1
Total SCD 40 PVC pipe:	0 ft	4" SS female cap:	1
4in x 3ft SCD 5 SS pipe:	1		
4in x 5ft SCD 5 SS pipe:	1	4in x 5ft SCD 10 SS pipe:	1
4in x 10ft SCD 5 SS pipe:		4in x 10ft SCD 10 SS pipe:	2
4in x 20ft SCD 5 SS pipe:	20	4in x 20ft SCD 10 SS pipe:	3
Total SCD 5 SS pipe:	408 ft	Total SCD 10 SS pipe:	85 ft

Well Completion:

100# bags 16/40 sand:	9	bags
100# bags 10/20 sand:		bags
100# bags 8/14 sand:		bags
100# bags 8/20 sand:	29	bags

94# bags cement:	125	bags
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5 gal. buckets bentonite:	0	buckets
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50# bentonite powder:	12.5	bags
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Benseal:	0.5	bags
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Surface Casing:

94# bags cement:	35	bags
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50# bags bentonite powder:	2	bags
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Used 296 gallons water to mix grout.

Pertinent Field Notes:

- 03/30/90 Spent morning at WB-4, then mobilizing to PL-4. Had to remobilize to BLM-6 after a NASA schedule change. -Egan
- 04/02/90 Driller sick today. No drilling. Service crew came out to mix mud, line mud pit, and perform minor servicing to rig and mud pump. - Egan
- 04/03/90 Spud BLM-6. Drilled mud rotary, 9 7/8" pilot hole from 0' to 28'. Encountered a boulder at $\approx 26'$ that decreased drilling rates to 1'/hr, therefore not much footage today. Mill-tooth bit was destroyed on boulder. Will try to find a replacement for tomorrow. - Egan
- 04/04/90 Exchange the bad 9 7/8" bit with a 12 1/4" bit and drill, mud rotary, 0'-70'. Attach 16" reamer bit and ream 0'-70'. - Egan
- 04/05/90 Install and grout 10" x 70' surface casing. - Egan
- 04/06/90 Change over from mud rotary to air-foam rotary drilling. Drilling was delayed due to a clogged bit. Drill bit had to be ripped out and unclogged before drilling could commence. Drilled from 70' to 235' in alluvium with 9 7/8" tricone button bit. No water was detected while drilling. - Cooper

- 04/09/90 Repair to auxiliary compressor delayed drilling by 30 minutes. Drill from 235' to 375' using air foam rotary with 9 7/8" tricone button bit. No water observed while drilling. Top of bedrock encountered at 353'. Broke hydraulic connection on break-out wrench while tripping out; repaired. - Cooper
- 04/10/90 Took water level at 359' with borehole depth at 375'. Change from 9 7/8" tricone button bit to 9 1/4" hammer bit. Drilled from 375' to 506'. Noticeable thinning of drilling foam at 493'. Hydraulic seal blew out on top head, was temporarily repaired so drill pipe could be tripped out. No aquifer tests were performed due to the rig problems. - Cooper
- 04/11/90 Took water level at 367.8' from top of the deflector. Mobilized equipment off the well site. Larjon left early to take BE Rig in for repairs to the top-head seal. - Cooper
- 04/12/90 Southwest Surveys ran a full suite of geophysical logs. Larjon loaded completion material and steam cleaned the tremie pipe and stainless material which had damaged plastic protectors. Ran tremie to 357' and well screen and casing into surface casing. - Cooper
- 04/13/90 Finished running stainless casing for bottom hole completion. Install 8//20 gravel pack, 16/40 upper sand and pumped plug. Screen interval 487.7 - 498.2. - Cooper
- 04/16/90 Water level in open bole = 342'(GL). Water level in well casing = 367.8'(GL). Bailed to check water production of well before continuing with completion. Well produced water; added filler sand and mixed grout (100 sacks cement, 10 sacks gel). - Cooper
- 04/17/90 Grout level in borehole at 73' (292' rise). Mixed 25 bags cement and 2.5 bags gel; grouted well to the surface and installed well guard pipe. Larjon went to set-up on WB-5. - Cooper
- 04/18/90 Development: Surged well 20 times, bail well 15 times; took water level after bail at 473.7'. Set 1.5 hp submersible pump at \approx 494'. Well sustained a 12-12.5 pump rate. Purged 850 total gallons until parameters stabilized and turbidity was below 1.5 NTU. Well developed. - Cooper